CPC  COOPERATIVE PATENT CLASSIFICATION

B  PERFORMING OPERATIONS; TRANSPORTING

(NOTES omitted)

TRANSPORTING

B64  AIRCRAFT; AVIATION; COSMONAUTICS

B64D  EQUIPMENT FOR FITTING IN OR TO AIRCRAFT; FLYING SUITS; PARACHUTES;
ARRANGEMENTS OR MOUNTING OF POWER PLANTS OR PROPULSION
TRANSMISSIONS IN AIRCRAFT

WARNINGS

1. The following IPC groups are not in the CPC scheme. The subject matter for these IPC groups is classified in the following
CPC groups:
   B64D 15/18  covered by B64D 15/16
   B64D 25/102 covered by B64D 25/10
   B64D 25/105 covered by B64D 25/10
   B64D 25/108 covered by B64D 25/10
   B64D 25/11 covered by B64D 25/10
   B64D 25/112 covered by B64D 25/10
   B64D 25/115 covered by B64D 25/10
   B64D 25/118 covered by B64D 25/10

2. In this subclass non-limiting references (in the sense of paragraph 39 of the Guide to the IPC) may still be displayed in the
scheme.

1/00  Dropping, ejecting, releasing, or receiving articles, liquids, or the like, in flight
(with respect to weapon sights devices F41G takes precedence, parachutes
per se B64D 17/00; ejectable seats B64D 25/10; ejectable capsules B64D 25/12; refuelling
during flight B64D 39/00; launching apparatus for projecting projectiles or missiles F41F 1/00, F41F 7/00; rocket
or torpedo launchers F41F 3/00)

1/02  .  Dropping, ejecting, or releasing articles (jettisonable fuel reservoirs B64D 37/12)
1/04  . . the articles being explosive, e.g. bombs (arming or setting bomb fuzes F42C)
1/06  . . Bomb releasing; Bombs doors
1/08  . . the articles being load-carrying devices
1/10  . . . Stowage arrangements for the devices in aircraft
1/12  . . . Releasing
1/14  . . . Absorbing landing shocks
1/16  . Dropping or releasing powdered, liquid, or gaseous matter, e.g. for fire-fighting (jettisoning fuel
       B64D 37/26)
1/18  . . by spraying, e.g. insecticides (spraying apparatus per se B05B)
1/20  . . for sky-writing
1/22  . Taking-up articles from earth's surface

3/00  Aircraft adaptations to facilitate towing or being
towed (B64D 39/00 takes precedence)

3/02  . for towing targets

5/00  Aircraft transported by aircraft, e.g. for release
or reberthing during flight (flying units formed by separate aircraft B64C 37/02)

7/00  Arrangements of military equipment, e.g.
armaments, armament accessories, or military
shielding, in aircraft; Adaptations of armament
mountings for aircraft (dropping bombs or the like
B64D 1/00; armaments or mountings therefor per se
F41)

7/02  . the armaments being firearms
7/04  . . fixedly mounted
7/06  . . movably mounted
7/08  . Arrangements of rocket launchers {or releasing
means} (rocket launchers per se, e.g. rocket pods,
F41F 3/06)

9/00  Equipment for handling freight; Equipment for
facilitating passenger embarkation or the like
(emergency equipment B64D 17/00, B64D 19/00,
B64D 25/00; structures integral with fuselage to
facilitate loading, fuselage floors specially adapted
for freight, steps mounted on and retractable within
aircraft B64C; ground installations B64F)

9/003  . {Devices for retaining pallets or freight containers
(securing freight containers on vehicles B69P 7/00)

2009/006  . {Rollers or drives for pallets of freight containers,
e.g. PDU)

10/00  Flying suits (helmets in general A42B 3/00; breathing
helmets A62B 18/00)

2010/002  . {Anti-g suits or garments}
2010/005  . {High altitude suits or garments, e.g. partial or total
pressure}
2010/007  . {Suits with cooling or heating means}

11/00  Passenger or crew accommodation; Flight-deck
installations not otherwise provided for
11/007 . {Devices specially adapted for food or beverage distribution services}
11/008 . {Arrangements for entertainment or communications, e.g. radio, television}
11/015 . {Permanently mounted seat back monitors}
11/016 . {Seat back fixtures for removable monitors, e.g. tablet computers}
11/017 . {Monitors mounted on or in the seat other than the seat back}
11/018 . {Loudspeakers mounted in the seat back}
11/019 . {Individual entertainment or communication system remote controls therefor, located in or connected to seat components, e.g. to seat back or arm rest}
11/020 . {Movable or removable cabin dividers, e.g. for class separation (bulkheads B64C 1/10)}
11/021 . {Stowage devices for passengers' personal luggage}
11/022 . {Modular or preassembled units for creating cabin interior structures}
11/023 . {Cabin passenger reading lights}
11/024 . {Windows displaying outside view, artificially generated}
11/025 . {Rest berths, beds or the like}
11/026 . {for crew members, e.g. for sleeping during flight}
11/027 . {Bed units for passengers attached to the ceiling of the fuselage}
11/028 . {Arrangements for mounting stretchers in aircraft cabins}
11/029 . {Toilet fittings (of general application A47K)}
11/030 . {Galleys}
11/032 . {Arrangements of seats, or adaptations or details specially adapted for aircraft seats (crew seat constructions for emergency purposes B64D 25/04)}
11/033 . {Arrangement of seats for non-standard seating layouts, e.g. seats staggered horizontally or vertically, arranged in an angled or fishbone layout, or facing in other directions than the direction of flight}
11/034 . {Seat modules, i.e. seat systems including furniture separate from the seat itself}
11/035 . {including a bed, e.g. cocoon type passenger seat modules}
11/036 . {including tables or desks}
11/037 . {with privacy shells, screens, separators or the like (class dividers B64D 11/0023)}
11/038 . {with devices specially adapted for exercising during travel; with devices specially adapted to prevent thrombosis}
11/039 . {with means for holding the passenger in a standing position}
11/040 . {specially adapted for children}
11/041 . {with ejection means}
11/042 . {with energy absorbing means specially adapted for mitigating impact loads for passenger seats, e.g. at a crash}
11/043 . {Belts or other passenger restraint means for passenger seats}
11/044 . {Arrangements of airbags}
11/045 . {Airbag initiation or activation means}
11/046 . {Arrangements of electrical connectors, e.g. for earphone, internet or electric supply}
11/047 . {with individual temperature or ventilation control}
11/048 . {Seats combined with storage means}
11/049 . {[the storage means being specially adapted for emergency equipment]}
11/050 . {for life vests}
11/051 . {[for life vests and intended for external use, e.g. parachutes or life rafts]}
11/052 . {Personal storage means or waste disposal bags}
11/053 . {with foldable tables, trays or cup holders}
11/054 . {with features for adjustment or converting of seats}
11/055 . {characterised by the arrangement of electric motors for adjustment}
11/056 . {Adjustable inclination or position of seats}
11/057 . {Seats convertible into beds}
11/058 . {Adjustable headrests}
11/059 . {Adjustable foot or leg rests}
11/060 . {Adjustable arm rests}
11/061 . {Seats characterised by special features of stationary arms, foot or head rests}
11/062 . {Seats characterised by special upholstery or cushioning features}
11/063 . {Lower frame constructions}
11/064 . {Seats characterised by special features for reducing weight}
11/065 . {specially adapted for pilots}
11/066 . {specially adapted for cabin crew}
11/067 . {Width modification of seat assemblies, e.g. for class modification}
11/068 . {Means for fastening seats to floors, e.g. to floor rails}
11/069 . {Seats suspended from aircraft ceiling}
11/070 . {Seats suspended from aircraft walls}
13/00 {Arrangements or adaptations of air-treatment apparatus for aircraft crew or passenger, or freight space; or structural parts of the aircraft} (treatment rooms with artificial climate for medical purposes A61G 10/02; respiratory apparatus in general A62B; for vehicles in general B60H)
13/003 . {Cabin ventilation nozzles}
13/004 . {the air being used to cool structural parts of the aircraft}
13/005 . {the air being pressurised}
13/006 . {Automatic control of pressure}
13/007 . {the air being conditioned (pressurising B64D 13/02)}
13/008 . {Environmental Control Systems}
13/009 . {providing hot air or liquid for deicing aircraft parts, e.g. aerodynamic surfaces or windows}
13/010 . {combined with auxiliary power units (APU's)}
13/011 . {with subsystems for cooling avionics}
13/012 . {with arrangements for reducing or managing bleed air, using another air source, e.g. ram air}
13/013 . {used in combination with boundary layer control systems}
13/014 . {comprising means for distribution effusion of conditioned air in the cabin}
13/015 . {with subsystems for cooling food, catering or special loads}
B64D

17/00 De-icing or preventing icing on exterior surfaces of aircraft (motor vehicles specially adapted for carrying de-icing equipment B60P)

17/02 . by ducted hot gas or liquid
17/04 . Hot gas application
17/06 . Liquid application (in general B05)
17/08 . exuded from surface
17/10 . sprayed over surface
17/12 . by electric heating (electric heating elements in general H05B)
17/14 . controlled cyclically along length of surface
17/16 . by mechanical means
17/18 . [using electro-impulsive devices]
17/20 . Means for detecting icing or initiating de-icing
17/22 . Automatic initiation by icing detector
17/24 .

17/25 . (for gliding chutes)
17/04 . formed with two or more canopies about a common axis
17/06 . formed with two or more canopies arranged about a cluster
17/08 . Secondary or shock-absorbing canopies attached to load line
17/10 . Ribbon construction or the like
17/12 . constructed to provide variable or non-uniform porosity over area of canopy
17/14 . with skirt or air-deflecting panels
17/16 . secured to hem of main canopy
17/18 . Vent arrangement or construction
17/20 . variable in area
17/22 . Load suspension
17/24 . Rigging lines
17/26 . attached to hem of canopy
17/28 . attached to apex of canopy
17/30 . Harnesses (harnesses per se A62B)
17/32 . Construction of quick-release box
17/34 . adapted to control direction or rate of descent
17/36 . by anti-squid lines
17/38 . Releasable fastening devices between parachute and load or pack
17/39 . . by static line
17/42 . rigid
17/44 . . forming part of load
17/46 . . Closing means
17/48 . . with separate pack for extractor of auxiliary parachute
17/50 . . formed with separate compartments for main canopy, rigging lines, or auxiliary parachute
17/52 . . Opening, e.g. manual
17/54 . . automatic
17/56 . . . responsive to barometric pressure
17/58 . . . responsive to time-delay mechanism
17/60 . . . by static line
17/62 . . Deployment
17/64 . . by extractor parachute
17/66 . . attached to hem of main canopy
17/68 . . attached to apex of main canopy
17/70 . . by springs
17/72 . . by explosive or inflatable means

17/74 . . . [by explosive means]
17/76 . . Sequential deployment of a plurality of canopies
17/78 . . facilitated by method of folding or packing
17/80 . . in association with other load-retarding apparatus
19/00 Non-canopied parachutes
19/02 . Rotary-wing parachutes
21/00 Testing of parachutes
23/00 Training of parachutists
25/00 Emergency apparatus or devices, not otherwise provided for (parachutes B64D 17/00, B64D 19/00)

25/02 . Supports or holding means for living bodies
25/04 . Seat modifications
25/06 . Harnessing
25/08 . Ejecting or escaping means (escape apertures B64C)
25/10 . Ejector seats
25/12 . Ejectable capsules

NOTE

B64D 17/025 takes precedence over
B64D 17/04 - B64D 17/18

B64D 17/225 takes precedence over
B64D 17/04 - B64D 17/18

EC components

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Emergency apparatus or devices, not otherwise provided for (parachutes B64D 17/00, B64D 19/00)

jettisoning of fuel tanks or fuel per se B64D 37/00;
(specially adapted for protection against criminal attack, e.g. anti-hijacking systems B64D 45/0015) ;
safety belts or body harnesses in general A62B 35/00

Training of parachutists

23/00
Arrangement or mounting of power plant in aircraft; Aircraft characterised thereby (attitude, flight direction, or altitude control of aircraft by jet reaction B64C)

27/00

27/02 . Aircraft characterised by the type or position of power plant (fuselages or wings adapted for mounting power plant B64C)

27/023 . (of rocket type, e.g. for assisting taking-off or braking)

27/026 . (comprising different types of power plants, e.g. combination of an electric motor and a gas-turbines)

27/04 . of piston type

27/06 . within or attached to wing

27/08 . within or attached to fuselage

27/10 . of gas-turbine type (B64D 27/16 takes precedence)

27/12 . within or attached to wing

27/14 . within or attached to fuselage

27/16 . of jet type

27/18 . within or attached to wing

27/20 . within or attached to fuselage

27/22 . using atomic energy

27/24 . using steam, electricity, or spring force (B64D 27/16 takes precedence)

27/26 . Aircraft characterised by construction of power-plant mounting

27/262 . (Engine support arrangements or elements)

27/264 . (comprising box like supporting frames)

27/266 . (comprising suspension arrangements for supporting vertical loads)

27/268 . (comprising thrust links)

29/00 Power-plant nacelles, fairings, or cowlings (nacelles not otherwise provided for B64C)

29/02 . associated with wings (wings adapted for mounting power plant B64C)

29/04 . associated with fuselages

29/06 . Attaching of nacelles, fairings or cowlings

29/08 . Inspection panels for power plants

31/00 Power plant control; Arrangement thereof (F02 takes precedence) flying controls B64C)

31/02 . Initiating means

31/04 . actuated personally

31/06 . actuated automatically

31/08 . for keeping cruising speed constant (conjoint control of power plant and propeller B64C)

31/10 . for preventing asymmetric thrust upon failure of one power plant

31/12 . for equalising or synchronising power plants

31/14 . Transmitting means between initiating means and power plants

33/00 Arrangements in aircraft of power plant parts or auxiliaries not otherwise provided for

33/02 . of combustion air intakes (air intakes for gas-turbine plants or jet-propulsion plants per se F02C 7/04; air intakes for combustion engines in general B62M 35/00)

2033/0206 . (comprising noise reduction means, e.g. acoustic liners)

2033/0213 . (specially adapted for auxiliary power units (APU’s))

2033/022 . (comprising bird or foreign object protections)

2033/0226 . (comprising boundary layer control means)

2033/0233 . (comprising de-icing means)

2033/024 . (comprising cooling means)

2033/0246 . (comprising particle separators)

2033/0253 . (specially adapted for particular type of aircraft)

2033/026 . (for supersonic or hypersonic aircraft)

2033/0266 . (specially adapted for particular type of power plants)

2033/0273 . (for jet engines)

2033/028 . (for piston engines)

2033/0286 . (for turbofan engines)

33/04 . of exhaust outlets or jet pipes (exhaust outlets for combustion engines in general F01N1; jet pipes or nozzles for jet-propulsion plants per se F02K; plants characterised by the form or arrangement of the jet pipe or nozzle F02K (altitude, flight direction, or altitude control by jet reaction B64C))

2033/045 . (comprising infrared suppressors)

33/06 . (Silencing exhaust or propulsion jets (ground installations B64F))

33/08 . of power plant cooling systems (cooling of internal-combustion engines per se F01P; cooling of gas-turbine plants or jet-propulsion plants per se F03C, F02K)

33/10 . Radiator arrangement

33/12 . of retractable type

35/00 Transmitting power from power plant to propellors or rotors; Arrangements of transmissions (propellers or rotors per se, helicopter transmissions B64C)

35/02 . characterised by the type of power plant

35/04 . characterised by the transmission driving a plurality of propellors or rotors

35/06 . the propellors or rotors being counter-rotating

35/08 . characterised by the transmission being driven by a plurality of power plants

37/00 Arrangements in connection with fuel supply for power plant (refuelling during flight B64D 39/00)

37/005 . (Accessories not provided for in the groups B64D 37/02 - B64D 37/28)

37/02 . Tanks (tanks constructed integrally with aircraft wings B64C; shape or construction of tanks per se B65D)

37/04 . Arrangement thereof in or on aircraft

37/06 . Constructional adaptations thereof

37/08 . Internal partitioning

37/10 . to facilitate fuel pressurisation

37/12 . jettisonable

37/14 . Filling or emptying (transferring fuels to adjust aircraft trim B64C)

37/16 . Filling systems (ground installations for fuelling aircraft B64F)
Conditioning fuel during filling

Emptying systems

facilitating emptying in any position of tank

using gas pressure

Jettisoning of fuel

Control thereof

Fuel systems for specific fuels

Safety measures not otherwise provided for, e.g. preventing explosive conditions (extinguishing or preventing fires in aircraft A62C)

Conditioning fuel, e.g. heating (during filling B64D 37/18)

Refuelling during flight (filling or emptying fuel tanks B64D 37/14)

Means for paying-in or out hose

Adaptations of hose construction (pipes in general F16L)

Connecting hose to aircraft; Disconnecting hose therefrom

Power installations for auxiliary purposes

Arrangements or adaptations of instruments (arrangements of cameras B64D 47/08; aeronautical measuring instruments per se G01C)

Aircraft indicators or protectors not otherwise provided for (camouflage F41H 3/00)

Devices specially adapted to indicate the position of a movable element of the aircraft, e.g. landing gear

 Devices specially adapted for the protection against criminal attack, e.g. anti-hijacking systems

WARNING

Group B64D 45/0015 is impacted by reclassification into groups B64D 45/0018, B64D 45/0021, B64D 45/0026, B64D 45/0028 and B64D 45/0029.

All groups listed in this Warning should be considered in order to perform a complete search.

WARNING

Group B64D 45/0018 is incomplete pending reclassification of documents from group B64D 45/0015.

Groups B64D 45/0015 and B64D 45/0021 should be considered in order to perform a complete search.

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Groups B64D 45/0015 and B64D 45/0021 should be considered in order to perform a complete search.
WARNING

Group B64D 45/0036 is impacted by reclassification into groups B64D 45/0039, B64D 45/0044, and B64D 45/0048.

All groups listed in this Warning should be considered in order to perform a complete search.

WARNING

Group B64D 45/0039 is incomplete pending reclassification of documents from group B64D 45/0036. Groups B64D 45/0036 and B64D 45/0039 should be considered in order to perform a complete search.

WARNING

Group B64D 45/0044 is incomplete pending reclassification of documents from group B64D 45/0036. Groups B64D 45/0036 and B64D 45/0044 should be considered in order to perform a complete search.

WARNING

Group B64D 45/0048 is incomplete pending reclassification of documents from group B64D 45/0036. Groups B64D 45/0036 and B64D 45/0048 should be considered in order to perform a complete search.

WARNING

Group B64D 45/0056 should be considered in order to perform a complete search.

## 45/0036
- {by disabling or restraining attackers}

## 45/0039
- {by electrical shock}

## 45/0042
- {by spraying or injecting chemicals}

## 45/0044
- {by restraining within seats}

## 45/0048
- {by harnesses, nets, ropes, or the like (B64D 45/0044 takes precedence)}

## 45/0051
- {by monitoring passengers or crew on aircraft}

## 45/0053
- {using visual equipment, e.g. cameras}

## 45/0056
- {detecting passenger or crew behavior by sensors, e.g. biometrics}

## 45/0059
- {by communicating emergency situations to ground control or between crew members}

## 45/0061
- {by protecting cabin or cargo hold from bombs}

## 45/0063
- {by avoiding the use of electronic equipment during flight, e.g. of mobile phones or laptops}

## 2045/0065
- {Black boxes, devices automatically broadcasting distress signals}

## 2045/007
- {Indicators or signs in the cabin, e.g. exit signs or seat numbering}

## 2045/0075
- {Adaptations for use of electronic flight bags in aircraft; Supports therefor in the cockpit}

## 2045/008
- {Devices for detecting or indicating hard landing}

## 2045/0085
- {Devices for aircraft health monitoring, e.g. monitoring flutter or vibration}

## 2045/009
- {Fire detection or protection; Erosion protection, e.g. from airborne particles}

## 2045/0095
- {Devices specially adapted to avoid bird strike}

## 45/02
- Lightning protectors; Static dischargers (in general H01T)